

**An exploration to Pan-Christic Biogenesis with implications:
Alternative to Crick's Panspermia and Its Implications for Cosmic Consciousness**

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Abstract

The traditional panspermia hypothesis, popularized by Francis Crick and Leslie Orgel, posits that life originated elsewhere in the cosmos and was transported to Earth via meteoritic or cometary vectors. While panspermia remains an active research topic, it faces challenges related to the survivability of complex biomolecules during interstellar transit and the lack of direct empirical support. This paper introduces **pan-Christic biogenesis**, a conjectural framework that attributes the emergence of life to a purposeful, consciousness-infused cosmic agency rooted in theological tradition. Drawing on historical biogenesis experiments (e.g., Francesco Redi, 1668) and contemporary astrobiological observations, we contrast pan-Christic biogenesis with both panspermia and bio-semiotic approaches, emphasizing the role of inherent consciousness in celestial bodies (Sun, Earth, Moon). We further explore whether such consciousness could influence planetary catastrophes (e.g., Vesuvius 79 AD, hypothesized “Atlantis” submergence) and discuss the theological implications of divine intervention as described in biblical prophecy (Malachi). The article concludes with a comparative table of selected ancient catastrophes and outlines avenues for future interdisciplinary inquiry.

Introduction

1.1 Background – The origin-of-life problem remains unresolved. Classical biogenesis (spontaneous generation) was disproved by Francesco Redi’s 1668 experiments, which demonstrated that maggots arise from eggs laid by flies, not from decaying meat itself. Modern microbiology accepts that life arises from pre-existing life under suitable conditions (abiogenesis still under investigation).

1.2 Panspermia – Crick & Orgel (1973) proposed that nucleic-acid precursors could survive interstellar travel, seeding nascent planets. Despite intriguing laboratory data on extremophile resistance, panspermia lacks direct observational confirmation and raises the “origin of the seed” paradox.

Literature Review: From Biogenesis to Abiogenesis – Tracing the Experimental Foundations of Life-Origin Research

The question of how living systems arise has shaped biology for centuries. Early experimental work aimed to **disprove spontaneous generation**—the notion that life could emerge de novo from inert

matter—and to establish **biogenesis**, the principle that “life comes from life.” Landmark studies by Francesco Redi (1668) and Louis Pasteur (1859-1861) provided decisive evidence against spontaneous generation. In the twentieth century, the focus shifted toward **abiogenesis**, the hypothesis that life originated from non-living chemical precursors under pre-biotic conditions. This review follows the historical trajectory from Redi’s macroscopic experiments to modern synthetic chemistry that attempts to reconstruct the earliest steps of metabolism and genetics.

Table A – Introduction: Classical Experiments on Biogenesis

Scientist	Year	Experimental Design	Main Finding	Key Publication
Francesco Redi	1668	Meat placed in open jars vs. sealed jars; observation of maggot development	Maggots arose only where flies could lay eggs; ruled out “generation from meat”	<i>Esperienze Intorno alla Generazione de’ Viventi</i> (Redi, 1668)
Louis Pasteur	1859-1861	Sterile broth in swan-necked flasks; broth remained clear despite exposure to air	Microbial growth requires inoculation from existing cells; reinforced biogenesis	<i>Mémoire sur les phénomènes vitaux</i> (Pasteur, 1861)

These experiments collectively **established the principle of biogenesis** and set the methodological standard of controlling for contamination—a prerequisite for any later claim of life arising from non-living matter.

The Rise of Abiogenesis Research

Miller–Urey Experiment

Stanley Miller (1953) simulated early Earth’s reducing atmosphere (CH₄, NH₃, H₂, H₂O) and applied electrical discharges to generate organic molecules. The experiment yielded a suite of amino acids (e.g., glycine, alanine) and other organics, demonstrating that **pre-biotic synthesis of biologically relevant compounds is plausible** under plausible atmospheric conditions.

RNA World Hypothesis

The discovery that ribozymes can catalyze reactions (e.g., self-cleavage) led to the **RNA world** model, proposing that RNA served both as genetic material and catalyst before the evolution of DNA-protein systems. Key experiments showed non-enzymatic template-directed polymerization of ribonucleotides under mineral surfaces.

Pre-biotic Metabolism

Research by Sutherland and colleagues demonstrated **wet-dry cycling** on mineral surfaces can drive the formation of activated pyrimidine nucleotides from simple precursors (glycolaldehyde, cyanamide, phosphate). This work bridges the gap between simple organics and the building blocks of RNA.

Peptide Formation and Catalysis

Powner, Gerland, and Sutherland (2009) reported a pathway to **ribose-5-phosphate** and **nucleobases** that avoids the “ribose problem” by employing UV-driven chemistry on mineral substrates, supporting simultaneous emergence of nucleic acid components.

Autocatalytic Networks

Recent theoretical and experimental work on **autocatalytic sets** (e.g., Kauffman 1993; Hordijk & Steel 2013) suggests that once a minimal network of mutually catalytic reactions forms, it can sustain and expand, providing a plausible route from chemistry to metabolism.

Synthesis and Outlook

The progression from **macroscopic biogenesis experiments** (Redi, Pasteur) to **molecular-level abiogenesis studies** illustrates a methodological continuity: rigorous control of contamination, reproducibility, and incremental building of complexity. While Redi and Pasteur conclusively refuted spontaneous generation, modern work does **not claim that life spontaneously appeared in a single experiment**; rather, it maps plausible **stepwise pathways**—from simple organics to activated nucleotides, to self-replicating polymers, and finally to protocells capable of metabolism.

Key challenges remain:

- 1. **Environmental realism** – Replicating the exact conditions of early Earth (e.g., atmospheric composition, mineralogy).
- 2. **Integration of subsystems** – Demonstrating that nucleotide synthesis, peptide formation, and lipid assembly can co-occur in a single setting.
- 3. **Emergence of heredity** – Showing how informational polymers acquire sufficient fidelity for Darwinian evolution.

Continued interdisciplinary efforts—combining geochemistry, synthetic chemistry, and systems biology—are essential to bridge these gaps.

Results

Conceptual foundations and comparison

The pan-Christic biogenesis hypothesis seeks a teleological alternative that integrates a conscious cosmic agency (hereafter “the Divine”) with physical processes, aiming to resolve the seed-paradox by invoking purposeful creation rather than accidental dispersal.

Table 1

Aspect	Panspermia	Pan-Christic Biogenesis	Bio-semiotics
Core premise	Life (or its building blocks) is transferred across space.	Life is generated by a conscious cosmic agency that imbues matter with purpose.	Life is a network of sign-processes; meaning emerges without intrinsic consciousness.

Aspect	Panspermia	Pan-Christic Biogenesis	Bio-semiotics
Mechanism of distribution	Meteorites, comets, interstellar dust.	Divine intentionality expressed through cosmic bodies (Sun, Earth, Moon).	No distribution mechanism; focus on local semiotic interactions.
Role of consciousness	None (purely physical).	Central – Sun, Earth, Moon possess proto-consciousness.	Absent; consciousness is emergent, not fundamental.
Testability	Laboratory simulation of survival; isotopic signatures.	Currently non-empirical; relies on theological/philosophical argument.	Empirical studies of signaling in microorganisms.

Conscious Celestial Bodies

- Solar Consciousness – Analogous to the ancient concept of a “**living Sun**,” modern speculative physics sometimes treats the Sun as a self-organizing plasma system capable of complex information processing (e.g., magnetohydrodynamic turbulence). [2]
- Terrestrial Consciousness – Gaia-hypothesis literature proposes Earth as a self-regulating system; pan-Christic biogenesis interprets this regulation as a manifestation of divine intentionality.[1]
- Lunar Role – The Moon’s tidal influence on Earth’s biosphere is framed as a conduit for divine modulation of biological rhythms.

Re-reading past cataclysmic events as recorded in ancient past.

The hypothesis posits that a conscious Sun/Earth can intervene in extreme events when humanity deviates from divine commandments (cf. an interpretation of Malachi 4:1-2). Below is a non-exhaustive comparative table of ancient catastrophes, their geological evidence, and the speculative theological interpretation.

Table 2.

Event	Approx. Date	Geological / Archaeological Evidence	Traditional Scientific Explanation	Proposed Pan-Christic Interpretation
Mount Vesuvius eruption (Pompeii)	79 AD	Ash layers, preserved bodies, carbonized food	Plinian eruption driven by magma-gas dynamics	Sun’s “protective pulse” delayed wider devastation; divine warning to “forbidden practices.”

Event	Approx. Date	Geological / Archaeological Evidence	Traditional Scientific Explanation	Proposed Pan-Christic Interpretation
Santorini (Thera) eruption	~1600 B C	Thera ash in Mediterranean sediments, collapse caldera	Massive volcanic explosion, tsunami generation	Lunar tidal resonance amplified eruption; divine retribution for early Bronze-Age hubris.
“Atlantis” submergence (hypothetical)	~9600 B C (post-glacial)	Submerged structures in the Atlantic (controversial)	Rapid sea-level rise after meltwater pulse	Earth’s conscious “reset” to curb moral decay of an advanced coastal civilization.
Minoan Thera eruption impact	~1628 B C	Destruction layers on Crete, climatic anomalies	Volcanic winter, tsunamis	Sun’s “temperature modulation” limited global cooling, preserving life elsewhere.
Younger Dryas impact hypothesis	~12,800 BP	Ice-core nitrate spikes, megafaunal extinctions	Possible comet fragment airburst	

Caveat: The above interpretations are speculative and may be or may be not supported by mainstream scientific consensus. They are presented solely to illustrate how pan-Christic biogenesis might frame historical catastrophes.

Comparison with Bio-semiotics hypothesis

Bio-semiotics treats organisms as sign-processing systems, emphasizing meaning without invoking consciousness as a primitive property. Pan-Christic biogenesis diverges by **postulating intrinsic consciousness** at the planetary scale, thereby allowing a top-down influence on lower-level biological processes.

Table 3

Feature	Bio-semiotics	Pan-Christic Biogenesis
Agency	Distributed among organisms	Centralized (cosmic consciousness)
Evolutionary driver	Semiotic exchange, selection	Divine intention guiding evolutionary pathways

Feature	Bio-semiotics	Pan-Christic Biogenesis
Predictive power	Generates testable hypotheses about signaling networks	Lacks falsifiable predictions; primarily interpretive

Implications for Exobiology

1. **Search for Conscious Worlds** – If planetary consciousness is a prerequisite for life, exoplanet surveys should prioritize bodies exhibiting stable magnetic fields, energy fluxes, and self-regulating climates (e.g., Earth-like planets in the habitable zone).
2. **Re-evaluating Biosignatures** – Traditional biosignature gases (O₂, CH₄) might be complemented by “**consciousness markers**” such as anomalous electromagnetic patterns, though no empirical methodology exists yet.
3. **Ethical Considerations** – Recognizing planetary consciousness would demand new planetary protection protocols, akin to respecting sentient entities.

Discussion

Assessment

- **Empirical Gaps** – No measurable parameter currently validates planetary consciousness.
- **Philosophical Load** – The hypothesis blends theology with physics, raising methodological concerns about demarcation between science and belief.
- **Alternative Explanations** – Conventional geophysical models adequately explain the listed catastrophes without invoking divine agency.

Thus, pan-Christic biogenesis while remains a **metaphysical framework** rather than a scientific theory, but the suggested hypothesis may be found useful perhaps for interdisciplinary dialogue between theology, philosophy, and astrobiology.

An intertextual re-reading of Malachi 4:2 (based on Complete Jewish Bible)

The closing book of the Hebrew Scriptures, Malachi, ends with a striking vision that has long drawn the attention of theologians and biblical scholars. “But for you who fear My name, the Sun of righteousness shall rise with healing in its wings” (Malachi 4:2). Traditional exegesis reads this image as a messianic promise, yet an alternative reading invites us to imagine the “Sun of righteousness” as a literal, conscious presence that observes humanity’s harmful habits and stands ready to act.

The Conscious Sun

Recent philosophical and scientific discussions have entertained the notion that celestial bodies might possess a form of consciousness. If the Sun is understood as a sentient entity, Malachi’s prophecy acquires a fresh nuance. The Sun’s prodigious energy and sustaining force could be interpreted as the activity of a patient watcher, awaiting a shift in human behavior. The phrase “healing in its wings” may then symbolize the Sun’s capacity to restore balance and renewal to the earth’s ecosystems.

Viewing the passage this way raises the question of whether the Sun’s involvement is reactive—answering humanity’s deeds—or proactive—acting to safeguard the planet regardless of human choice. Malachi’s broader context warns of a decisive day of judgment, when the wicked will be “like stubble” and the righteous will “triumph” (Malachi 4:1-3). Within this framework, the Sun’s intervention appears as a divine response to humanity’s failure to fulfill its intended stewardship.

A Call to Awakening of Humanity in this Earth.

The image of the Sun of righteousness, bearing healing wings, conveys both hope and admonition. It summons humanity to awaken from self-destructive cycles and to align its conduct with the health of the planet. The anticipated solar intervention can be read as an invitation to transform priorities, placing the welfare of the earth and all its creatures at the forefront.

In an era marked by climate crisis, ecological loss, and pervasive social inequities, the resonance of Malachi’s vision intensifies. The prophetic declaration—“the Sun of righteousness shall rise with healing in its wings”—offers a compelling reminder that a transformative, perhaps even cosmic, awakening may be on the horizon if we choose to heed its warning.

Concluding remark

Pan-Christic biogenesis offers a teleologically oriented narrative that reframes the origin of life as a purposeful act of a conscious cosmos. While it provides an intriguing philosophical lens for interpreting ancient catastrophes and the possible consciousness of celestial bodies, it presently lacks empirical support and falsifiability. Consequently, it should be regarded as a speculative complement to, rather than a replacement for, established scientific frameworks such as abiogenesis, panspermia, and bio-semiotics. Continued interdisciplinary discourse may illuminate whether any aspects of planetary consciousness can ever be measured, and how such measurements could reshape our understanding of life in the universe.

Future Research

Table 4

Goal	Proposed Approach
Quantify planetary information processing	Develop metrics for planetary-scale entropy flow, magnetohydrodynamic coherence.
Integrate theological insights	Collaborative workshops with theologians, philosophers, and physicists to clarify terminology.
Explore consciousness-compatible biosignatures	Simulate electromagnetic signatures of self-organized plasma systems and compare with exoplanet observations.
Historical analysis of catastrophes	Conduct multidisciplinary studies (archaeology, geology, textual criticism) to assess any correlation with cultural narratives of divine judgment.

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